

IN THE UNITED STATES DISTRICT COURT FOR THE
NORTHERN DISTRICT OF OKLAHOMA

W. A. DREW EDMONDSON, in his)
capacity as ATTORNEY GENERAL)
OF THE STATE OF OKLAHOMA and)
OKLAHOMA SECRETARY OF THE)
ENVIRONMENT C. MILES TOLBERT,)
in his capacity as the)
TRUSTEE FOR NATURAL RESOURCES)
FOR THE STATE OF OKLAHOMA,)

Plaintiff,)

vs.)

4:05-CV-00329-TCK-SAJ

TYSON FOODS, INC., et al,)

Defendants.)

VOLUME I OF THE VIDEOTAPED
DEPOSITION OF DENNIS COOKE, PhD, produced as a
witness on behalf of the Defendants in the above
styled and numbered cause, taken on the 4th day of
December, 2008, in the City of Tulsa, County of
Tulsa, State of Oklahoma, before me, Lisa A.
Steinmeyer, a Certified Shorthand Reporter, duly
certified under and by virtue of the laws of the
State of Oklahoma.

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<p>1 they certainly went to a different method.</p> <p>2 Q Who was the person at CDM in charge of the</p> <p>3 sampling?</p> <p>4 A Overall it was Roger Olsen.</p> <p>5 Q Have you met with him in this case? 09:53AM</p> <p>6 A Many times.</p> <p>7 Q Have you ever told -- or strike that. Have</p> <p>8 you ever expressed any concerns or been critical of</p> <p>9 Dr. Olsen's work in this case?</p> <p>10 A I don't recall specifically being critical, 09:54AM</p> <p>11 no.</p> <p>12 Q Dr. Cooke, have you produced all of the</p> <p>13 sampling results that you reviewed in this case?</p> <p>14 A There's 2008 sampling results, which we have a</p> <p>15 supplemental report, at least a draft of it, in this 09:54AM</p> <p>16 case, and that has not been produced to the court.</p> <p>17 Q Would you provide that, please?</p> <p>18 A It's in my briefcase in Dr. Page -- I mean,</p> <p>19 Mr. Page's office.</p> <p>20 Q I need you to get that to Mr. Page. 09:54AM</p> <p>21 MR. BASSETT: And, Mr. Page, can you get</p> <p>22 that to us?</p> <p>23 MR. PAGE: Yeah. I can state for the</p> <p>24 Record that the data has been produced that we</p> <p>25 collected this last summer, but I'll get you the 09:54AM</p> <p style="text-align: center;">62</p>	<p>1 A Brian Bennett works for CDM, and to my</p> <p>2 knowledge those paragraphs are clearly pointed out</p> <p>3 as written by him.</p> <p>4 Q Who typed your report for you?</p> <p>5 A I typed a lot of it. Other parts were typed 09:56AM</p> <p>6 by two persons in Ron French's office, French being</p> <p>7 a CDM employee in St. Louis, and one was named Leah,</p> <p>8 and I'm sorry, I don't have the other woman's name,</p> <p>9 but I did a lot of the typing.</p> <p>10 Q Leah Fehl, F-E-H-L? 09:57AM</p> <p>11 A That's right. Thank you. I'm sorry.</p> <p>12 Q Anybody else?</p> <p>13 A No.</p> <p>14 Q Anybody edit your report?</p> <p>15 A Well, we edited it back and forth between the 09:57AM</p> <p>16 two us, Welch and I.</p> <p>17 Q Did Mr. Page edit it?</p> <p>18 A No.</p> <p>19 Q Did he make suggestions about what should be</p> <p>20 in your report? 09:57AM</p> <p>21 A The only contribution that he made was to</p> <p>22 provide us the Oklahoma code numbers or whatever</p> <p>23 they might be called to identify section of the</p> <p>24 Oklahoma code where we had shown that those codes</p> <p>25 are being violated in the reservoir. 09:57AM</p> <p style="text-align: center;">64</p>
<p>1 draft.</p> <p>2 Q Dr. Cooke, don't take this the wrong way, but</p> <p>3 I feel like I need to ask this, have you at any</p> <p>4 point destroyed any of the sampling results you</p> <p>5 reviewed? 09:55AM</p> <p>6 A No.</p> <p>7 Q Do you have GIS coordinates for the sampling</p> <p>8 sites used at Tenkiller or at Broken Bow?</p> <p>9 A No.</p> <p>10 Q Does anyone? 09:55AM</p> <p>11 A Not to my knowledge.</p> <p>12 Q Let's talk about your report for a moment.</p> <p>13 A Sure.</p> <p>14 Q Who participated in the preparation of your</p> <p>15 report besides yourself, of course? 09:55AM</p> <p>16 A Dr. Welch.</p> <p>17 Q Anybody else?</p> <p>18 A I consulted and so did Dr. Welch with Dr. Jack</p> <p>19 Jones of the University of Missouri.</p> <p>20 Q Anybody else besides Dr. Jones? 09:56AM</p> <p>21 A You know, there are four or five paragraphs in</p> <p>22 Dr. Welch's section that he identifies as being</p> <p>23 written by -- could be Brian Bennett, and that's the</p> <p>24 extent to which anyone else has been in on this.</p> <p>25 Q Who is Brian Bennett? 09:56AM</p> <p style="text-align: center;">63</p>	<p>1 Q Anything else?</p> <p>2 A That's it.</p> <p>3 Q Did Mr. Page ever tell you to take something</p> <p>4 out of your draft report?</p> <p>5 A No. 09:58AM</p> <p>6 Q Let's talk about Jack Jones. What did he do</p> <p>7 for you?</p> <p>8 A Jack is a real expert on midwestern reservoirs</p> <p>9 and known him a long, long time.</p> <p>10 Q Is he a limnologist? 09:58AM</p> <p>11 A He's a limnologist, and I've known him many,</p> <p>12 many years, and we were working on a section of the</p> <p>13 report that dealt with the effect of water residence</p> <p>14 time on concentration in the reservoir, and he's a</p> <p>15 real expert at that, probably the expert in the 09:58AM</p> <p>16 United States, and so we consulted with him about</p> <p>17 that. The second thing I consulted --</p> <p>18 Q Well, let me stop you. Why did you consult</p> <p>19 him on that?</p> <p>20 A Well, because I wanted to run by him what I 09:58AM</p> <p>21 was concluding, and what Dr. Welch was concluding</p> <p>22 about this, its impact, and as a result, he provided</p> <p>23 for us a very, very useful metric, and we put it</p> <p>24 into a graph. Welch and I put it into a graph</p> <p>25 that's in the report. He also advised me about land 09:59AM</p> <p style="text-align: center;">65</p>

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<p>1 A We were able to obtain enough data to 2 determine the trophic state of Tenkiller Reservoir 3 as far back as 1974, and at that time the evidence 4 is clear that the reservoir was oligotrophic or at 5 worst very mildly mesotrophic. Then -- 10:26AM</p> <p>6 Q Excuse me. Where did that evidence come from?</p> <p>7 A That evidence comes from a study by the U. S. 8 Environmental Protection Agency, and there is a 9 report by an investigator named Summers, and so 10 those two sources. Then we were able to obtain 10:27AM 11 large amounts of data beginning in 1986. So 12 somewhere between 1974/1975 and 1986, the reservoir 13 had become eutrophic.</p> <p>14 Q Okay. Are you going to be offering an opinion 15 in this case on the current trophic state of the 10:27AM 16 Tenkiller Reservoir?</p> <p>17 A Yes.</p> <p>18 Q What is that opinion?</p> <p>19 A The opinion is that the current trophic state 20 of the reservoir is eutrophic. 10:27AM</p> <p>21 Q What's your basis for that opinion?</p> <p>22 A Well, maybe I can expand on the answer first 23 and then go to that question second.</p> <p>24 Q Sure.</p> <p>25 A The trophic state of the reservoir varies 10:27AM</p> <p style="text-align: center;">86</p>	<p>1 benthic macro invertebrates, animals living in the 2 mud in the bottom of the reservoir, and, secondly, 3 the fishery commissions data on fish and the amount 4 of fish they stocked in the reservoir over the 5 years. So we had a very, very broad spectrum of 10:29AM 6 information all related to the condition of the 7 reservoir.</p> <p>8 Q There are -- there were four stations that you 9 used in Lake Tenkiller reservoir; right?</p> <p>10 A Yes. 10:29AM</p> <p>11 Q LK-1, 2, 3 and 4; is that right?</p> <p>12 A Yes.</p> <p>13 Q Okay. Is LK-1 located near the dam?</p> <p>14 A I can go through all of them.</p> <p>15 Q I'm going to ask you about all of them.</p> <p>16 A Excuse me, my voice. LK-01 is located near 17 the dam.</p> <p>18 Q Okay, and where is LK-2?</p> <p>19 A LK-02 is then up, the next station up, still 20 in very deep lake-like portion of the reservoir. 10:29AM</p> <p>21 Q How deep is the reservoir there?</p> <p>22 A The reservoir as LK-02 is close to 50 meters.</p> <p>23 Q Would you characterize stations LK-1 and LK-2 24 as being in the lacustrine portions of the 25 reservoir? 10:30AM</p> <p style="text-align: center;">88</p>
<p>1 greatly depending upon the region of the reservoir 2 that you are in, and the upper reservoir is 3 profoundly eutrophic, a word we call hypereutrophic, 4 whereas the reservoir near the dam is mesotrophic to 5 borderline eutrophic. So there is a gradient of 10:28AM 6 trophic state down the length of the reservoir. Now 7 I've forgotten what the next part --</p> <p>8 Q I want to know the basis of your opinion.</p> <p>9 A The basis of these conclusions are several.</p> <p>10 We determined the concentration of total phosphorus 10:28AM 11 in the reservoir, and we used the data of the 12 Geological Survey and Environmental Protection 13 Agency and Water Resources Board and Army Engineers 14 and their determination of phosphorus and the same 10:28AM 15 with chlorophyll and transparency. These are the 16 three big indicators of how eutrophic a reservoir 17 is. So we had a large dataset, and we obtained data 18 from 2005 through 2008, the summers of those years, 19 which just confirmed exactly what all of these other 20 agencies had found in previous years. So that's the 10:28AM 21 basis of it.</p> <p>22 We also determined dissolved oxygen and the 23 profile of it so that we knew that oxygen was absent 24 in the bottom of the reservoir, and finally we 25 looked at the biota of the reservoir. One was the 10:29AM</p> <p style="text-align: center;">87</p>	<p>1 A That's correct.</p> <p>2 Q And does lacustrine mean lake-like?</p> <p>3 A Lake, lake-like, yes.</p> <p>4 Q Where is station, LK Station No. 3?</p> <p>5 A No. 3 is what we call the transition zone, and 10:30AM 6 so it's up reservoir from 02, and this is the area 7 where a large amount of deposition of incoming 8 materials is occurring, and you can see this in the 9 profile of depth of the reservoir, that this is just 10 before the reservoir becomes deep water. 10:30AM</p> <p>11 Q So how deep is the water there in the 12 transition zone?</p> <p>13 A At the deepest is around 20 meters.</p> <p>14 Q Where is LK Station No. 4?</p> <p>15 A LK-04 is in the upper part of the reservoir. 10:31AM</p> <p>16 Q Is that what you call the riverine portion?</p> <p>17 A Yes.</p> <p>18 Q What does riverine mean?</p> <p>19 A Riverine means a portion of the reservoir 20 where flow is really the dominant process. 10:31AM 21 Reservoirs are different from lakes because of this 22 one-way flow of water from the river to the dam. 23 Lakes don't have that feature, and as you move down 24 the reservoir, the effect of flow dissipates. As 25 the reservoir becomes larger and deeper, velocity of 10:31AM</p> <p style="text-align: center;">89</p>

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<p>1 Q When you write an E-mail, Dr. Cooke, to other 2 people who are working with you on a project, do you 3 tell them in those E-mails what you really mean and 4 what you really believe?</p> <p>5 A I do, and that's what I said there. 10:43AM 6 MR. BASSETT: Let's go off the Record. 7 VIDEOGRAPHER: We're now off the Record. 8 The time is now 10:42 a.m. 9 (Following a short recess at 10:43 10 a.m., proceedings continued on the Record at 10:55 11 a.m.) 12 VIDEOGRAPHER: We are back on the Record. 13 The time is 10:54 a.m.</p> <p>14 Q Dr. Cooke, I want to go back for – I'm sorry, 15 did you have something? 10:55AM 16 A Yeah. Mr. Bassett, we mentioned earlier that 17 there is a report on the 2008 research, and you 18 asked for a copy of it and so here it is.</p> <p>19 Q Thank you. I want to go back for a moment, 20 Dr. Cooke, to what we marked as Defendant's Exhibit 10:55AM 21 No. 6. I'm going to hand it to you here and this is 22 your copy right here. Here it is right here. Would 23 you look at that particular page right there? 24 That's your handwriting, is it not? 25 A Sorry to say. 10:55AM</p> <p style="text-align: center;">98</p>	<p>1 A Yes. 2 Q What are those opinions? 3 A Could you rephrase that, and the reason I ask 4 you this is because that is a large section of this 5 report are the consequences, and this could go on 10:57AM 6 for quite some time in the conversation.</p> <p>7 Q Have you included in your report, in your 8 written report that you have submitted in this case 9 all of the opinions you're going to offer at the 10 trial of this case with regard to the consequences 10:57AM 11 of the reservoir's current condition? 12 A I may not have. 13 Q Well, that's why I'm asking. 14 A New literature reports have come to my 15 attention. Materials maybe that have just recently 10:58AM 16 been published have confirmed my opinions, but I'm 17 going to be using the results of those reports, and 18 we'll provide a list of those to you.</p> <p>19 Q Are you telling me that you are going to be 20 offering additional opinions other than what's in 10:58AM 21 your report? 22 A They will not change my opinions. They will 23 confirm and enhance my opinions. 24 Q And when are you going to be offering this 25 stuff? 10:58AM</p> <p style="text-align: center;">100</p>
<p>1 Q Is that your handwriting? 2 A Yes, it is. 3 Q So you wrote that; correct? 4 A Yes.</p> <p>5 Q Okay. Would you read at the bottom the 10:55AM 6 section that I've marked in yellow? 7 A This project is extremely important to Dave 8 Page and his firm. We have a green light to work 9 and to travel to meet.</p> <p>10 Q Okay. What was the importance of the case to 10:56AM 11 Mr. Page; what did he tell you? 12 A I don't remember. This is the summer of 2006, 13 so a lot happened between now and then. This is 14 while we were beginning to form our conclusions. 15 Data were coming in, and I do not recall why I said 10:56AM 16 that. This handwritten note of mine also says that 17 the expert reports were going to be written by 18 August of 2007, and here we were in late July, and 19 in part I know I was trying to encourage Gene to 20 work on his report and get it in and so forth. This 10:57AM 21 is just the kind of communications that occurred 22 between us and in-progress type communication. 23 Q Okay. Are you going to be offering, Dr. 24 Cooke, opinions at the trial of that case on the 25 consequences of the reservoir's current condition? 10:57AM</p> <p style="text-align: center;">99</p>	<p>1 A I'm not sure I understand what that means. 2 Q Well, have you been told that you can continue 3 to work on your report or to work on the opinions in 4 this case? 5 A Never been discussed. I'm operating like any 10:58AM 6 scientist would. There's always new information and 7 new stuff to learn, and that's what I'm doing, and 8 if I'm not allowed to put it in, why, then that's 9 the rules of the court that I don't know about it.</p> <p>10 Q I would like you to tell me what opinion 10:58AM 11 you're going to offer at trial on the consequences 12 of the reservoir's current condition. 13 A I'm going to be offering opinions regarding 14 the impact of disinfection byproducts, the impact of 15 algae growth. Those are the two. 10:59AM 16 Q What's your opinion on disinfection 17 byproducts? 18 A There are a number of the water plants along 19 the reservoir, as well as along the river, that have 20 on a quarterly basis disinfection byproduct 10:59AM 21 concentrations that are well in excess of the EPA 22 standards, and that's very serious. 23 Q What about on algae growth? 24 A The algae growth has gotten much heavier, and 25 we can see that in the data, that there's more 10:59AM</p> <p style="text-align: center;">101</p>

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